

10/633,890 searched 12-3-04

Connecting via Winsock to STN

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LOGINID:sssptal712mxf

PASSWORD:

TERMINAL (ENTER 1, 2, 3, OR ?):2

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NEWS 2 "Ask CAS" for self-help around the clock  
NEWS 3 SEP 01 INPADOC: New family current-awareness alert (SDI) available  
NEWS 4 SEP 01 New pricing for the Save Answers for SciFinder Wizard within  
STN Express with Discover!  
NEWS 5 SEP 01 New display format, HITSTR, available in WPIDS/WPINDEX/WPIX  
NEWS 6 SEP 27 STANDARDS will no longer be available on STN  
NEWS 7 SEP 27 SWETSCAN will no longer be available on STN  
NEWS 8 OCT 28 KOREAPAT now available on STN  
NEWS 9 NOV 18 Current-awareness alerts, saved answer sets, and current  
search transcripts to be affected by CERAB, COMPUAB, ELCOM,  
and SOLIDSTATE reloads  
NEWS 10 NOV 30 PHAR reloaded with additional data  
NEWS 11 DEC 01 LISA now available on STN

NEWS EXPRESS OCTOBER 29 CURRENT WINDOWS VERSION IS V7.01A, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004  
NEWS HOURS STN Operating Hours Plus Help Desk Availability  
NEWS INTER General Internet Information  
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NEWS PHONE Direct Dial and Telecommunication Network Access to STN  
NEWS WWW CAS World Wide Web Site (general information)

Enter NEWS followed by the item number or name to see news on that  
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\* \* \* \* \* STN Columbus \* \* \* \* \*

FILE 'HOME' ENTERED AT 09:55:54 ON 03 DEC 2004

=> file registry

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

0.21

0.21

FILE 'REGISTRY' ENTERED AT 09:56:03 ON 03 DEC 2004

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10/633,890 searched 12-3-04

Property values tagged with IC are from the ZIC/VINITI data file provided by InfoChem.

STRUCTURE FILE UPDATES: 1 DEC 2004 HIGHEST RN 791553-15-6  
DICTIONARY FILE UPDATES: 1 DEC 2004 HIGHEST RN 791553-15-6

TSCA INFORMATION NOW CURRENT THROUGH MAY 21, 2004

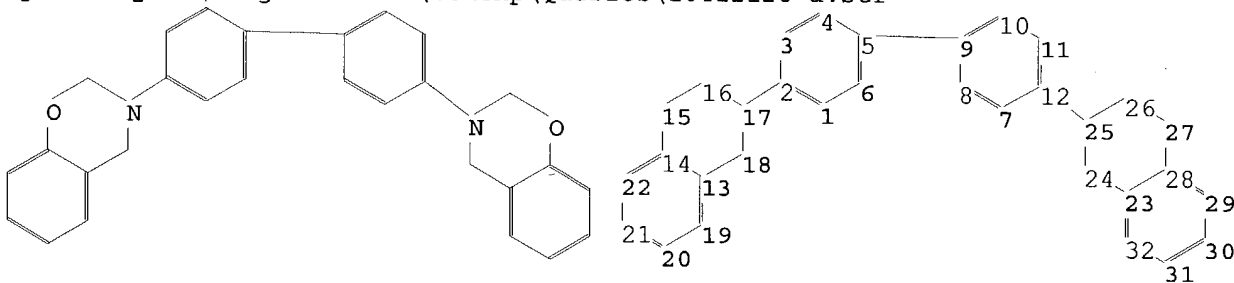
Please note that search-term pricing does apply when conducting SmartSELECT searches.

Crossover limits have been increased. See HELP CROSSOVER for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:  
<http://www.cas.org/ONLINE/DBSS/registryss.html>

=>

Uploading C:\Program Files\Stnexp\Queries\10412126 a.str



ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 31 32

chain bonds :

2-17 5-9 12-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18  
13-19 14-15 14-22 15-16 16-17 17-18 19-20 20-21 21-22 23-24 23-28 23-32  
24-25 25-26 26-27 27-28 28-29 29-30 30-31 31-32

exact/norm bonds :

2-17 12-25 13-18 14-15 15-16 16-17 17-18 23-24 24-25 25-26 26-27 27-28

exact bonds :

5-9

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-19  
14-22 19-20 20-21 21-22 23-28 23-32 28-29 29-30 30-31 31-32

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom  
29:Atom 30:Atom 31:Atom 32:Atom

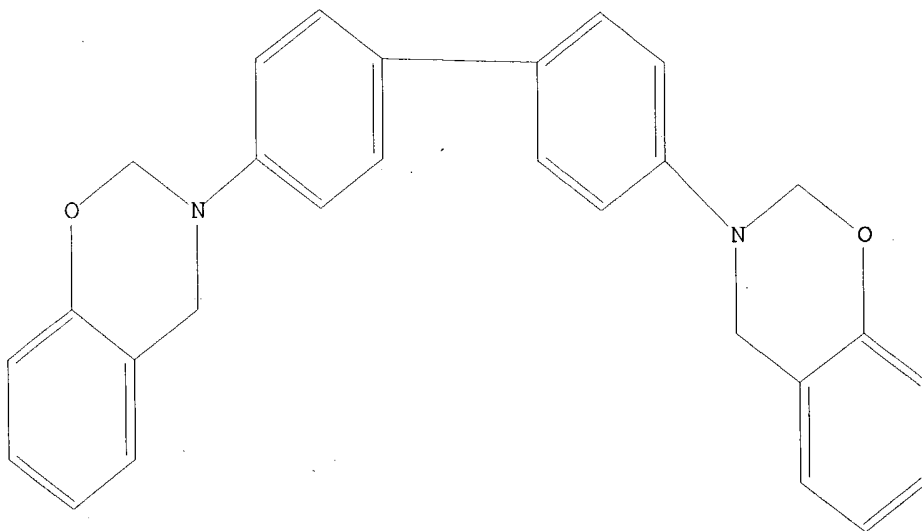
10/633,890 searched 12-3-04

L1 STRUCTURE UPLOADED

=> d l1

L1 HAS NO ANSWERS

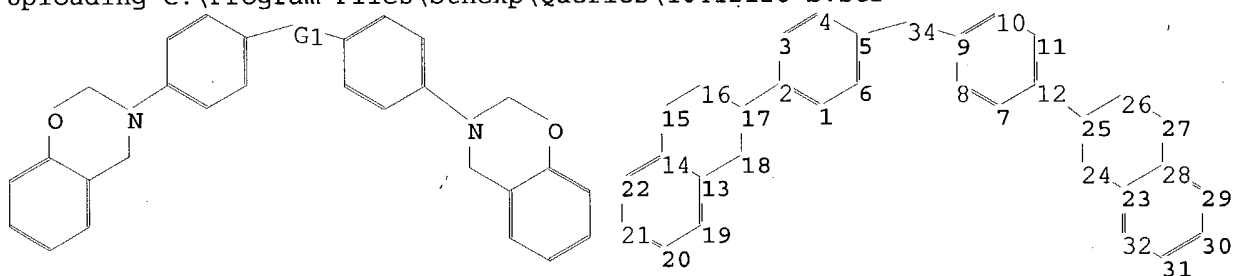
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=>

Uploading C:\Program Files\Stnexp\Queries\10412126 b.str



chain nodes :

34

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 31 32

chain bonds :

2-17 5-34 9-34 12-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18  
13-19 14-15 14-22 15-16 16-17 17-18 19-20 20-21 21-22 23-24 23-28 23-32  
24-25 25-26 26-27 27-28 28-29 29-30 30-31 31-32

10/633,890 searched 12-3-04

exact/norm bonds :

2-17 5-34 9-34 12-25 13-18 14-15 15-16 16-17 17-18 23-24 24-25 25-26  
26-27 27-28

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-19  
14-22 19-20 20-21 21-22 23-28 23-32 28-29 29-30 30-31 31-32

G1:O,S,SO2,Ak

Match level :

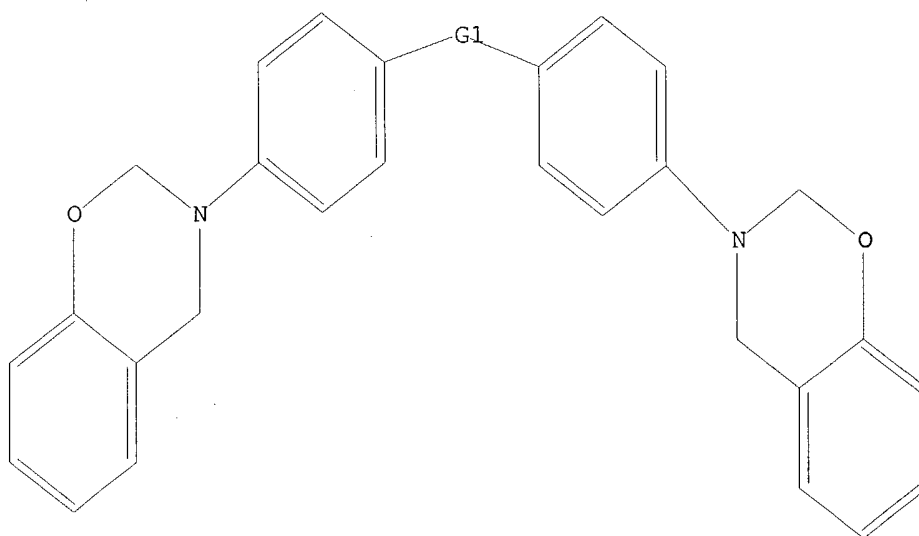
1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom  
29:Atom 30:Atom 31:Atom 32:Atom 34:CLASS

L2 STRUCTURE UPLOADED

=> d l2

L2 HAS NO ANSWERS

L2 STR



G1 O,S,SO2,Ak

Structure attributes must be viewed using STN Express query preparation.

=> s sam (l1 or l2)

SAMPLE SEARCH INITIATED 09:57:14 FILE 'REGISTRY'

SAMPLE SCREEN SEARCH COMPLETED - 33 TO ITERATE

100.0% PROCESSED 33 ITERATIONS

1 ANSWERS

SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE \*\*COMPLETE\*\*  
BATCH \*\*COMPLETE\*\*

PROJECTED ITERATIONS: 316 TO 1004

PROJECTED ANSWERS: 1 TO 80

10/633,890 searched 12-3-04

L3 '1 SEA SSS SAM (L1 OR L2)

=> s full (l1 or l2)

FULL SEARCH INITIATED 09:57:22 FILE 'REGISTRY'

FULL SCREEN SEARCH COMPLETED - 784 TO ITERATE

100.0% PROCESSED 784 ITERATIONS

23 ANSWERS

SEARCH TIME: 00.00.01

L4 23 SEA SSS FUL (L1 OR L2)

=> file caplus

COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

237.76

237.97

FILE 'CAPLUS' ENTERED AT 09:57:49 ON 03 DEC 2004

USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.

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FILE COVERS 1907 - 3 Dec 2004 VOL 141 ISS 23

FILE LAST UPDATED: 1 Dec 2004 (20041201/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l4

L5 15 L4

=> d l1 abs ibib hitstr 1

L1 HAS NO ANSWERS

'ABS IBIB HITSTR ' IS NOT A VALID STRUCTURE FORMAT KEYWORD

Structure Formats

SIA ----- Structure Image, Attributes, and map table if it contains data. (Default)

SIM ----- Structure Image.

SAT ----- Structure Attributes and map table if it contains data.

SCT ----- Structure Connection Table and map table if it contains data.

SDA ----- All Structure Data (image, attributes, connection table and map table if it contains data).

NOS ----- NO Structure data.

ENTER STRUCTURE FORMAT (SIM), NOS:

ENTER STRUCTURE FORMAT (SIM), NOS:d l5 abs ibib hitstr 1

'D L5 ABS IBIB HISTSTR 1' IS NOT A VALID STRUCTURE FORMAT KEYWORD

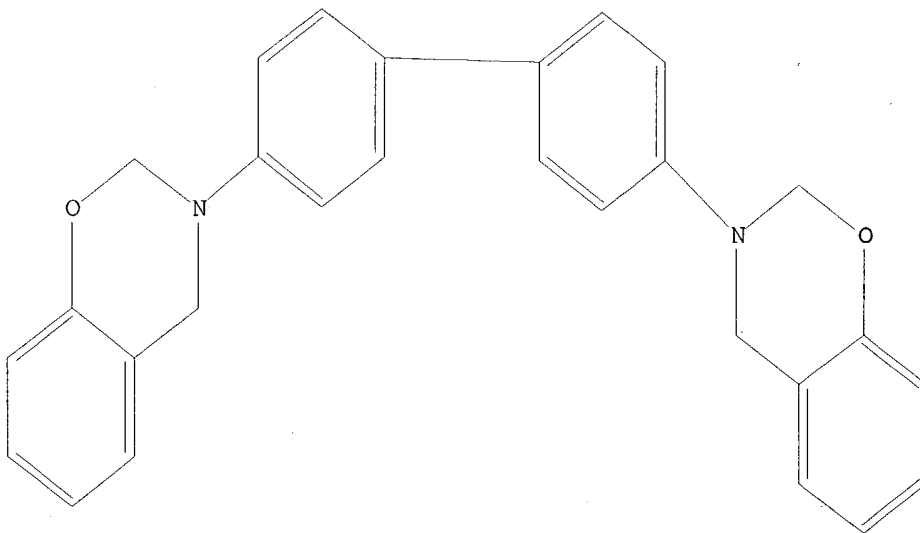
Structure Formats

SIA ----- Structure Image, Attributes, and map table if it contains data. (Default)

SIM ----- Structure Image.

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SAT ----- Structure ATtributes and map table if it contains data.  
SCT ----- Structure Connection Table and map table if it contains data.  
SDA ----- All Structure Data (image, attributes, connection table and map table if it contains data).  
NOS ----- NO Structure data.  
ENTER STRUCTURE FORMAT (SIM), NOS:1  
'1' IS NOT A VALID STRUCTURE FORMAT KEYWORD  
Structure Formats  
SIA ----- Structure Image, Attributes, and map table if it contains data. (Default)  
SIM ----- Structure Image.  
SAT ----- Structure ATtributes and map table if it contains data.  
SCT ----- Structure Connection Table and map table if it contains data.  
SDA ----- All Structure Data (image, attributes, connection table and map table if it contains data).  
NOS ----- NO Structure data.  
ENTER STRUCTURE FORMAT (SIM), NOS:sia  
'SIA' IS NOT A VALID STRUCTURE FORMAT KEYWORD  
Structure Formats  
SIA ----- Structure Image, Attributes, and map table if it contains data. (Default)  
SIM ----- Structure Image.  
SAT ----- Structure ATtributes and map table if it contains data.  
SCT ----- Structure Connection Table and map table if it contains data.  
SDA ----- All Structure Data (image, attributes, connection table and map table if it contains data).  
NOS ----- NO Structure data.  
ENTER STRUCTURE FORMAT (SIM), NOS:sim  
L1 STR



Structure attributes must be viewed using STN Express query preparation.

=> d 15 abs ibib histstr 1  
'HISTSTR' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

10/633,890 searched 12-3-04

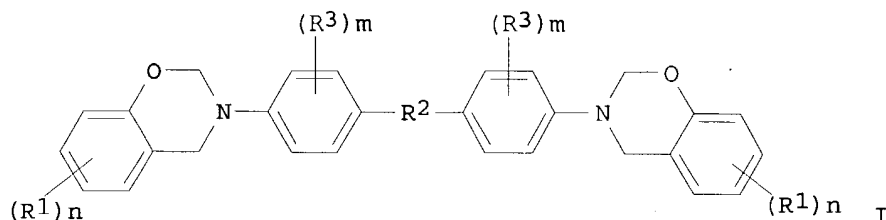
ABS ----- GI and AB  
ALL ----- BIB, AB, IND, RE  
APPS ----- AI, PRAI  
BIB ----- AN, plus Bibliographic Data and PI table (default)  
CAN ----- List of CA abstract numbers without answer numbers  
CBIB ----- AN, plus Compressed Bibliographic Data  
DALL ----- ALL, delimited (end of each field identified)  
DMAX ----- MAX, delimited for post-processing  
FAM ----- AN, PI and PRAI in table, plus Patent Family data  
FBIB ----- AN, BIB, plus Patent FAM  
IND ----- Indexing data  
IPC ----- International Patent Classifications  
MAX ----- ALL, plus Patent FAM, RE  
PATS ----- PI, SO  
SAM ----- CC, SX, TI, ST, IT  
SCAN ----- CC, SX, TI, ST, IT (random display, no answer numbers;  
SCAN must be entered on the same line as the DISPLAY,  
e.g., D SCAN or DISPLAY SCAN)  
STD ----- BIB, IPC, and NCL  
  
IABS ----- ABS, indented with text labels  
IALL ----- ALL, indented with text labels  
IBIB ----- BIB, indented with text labels  
IMAX ----- MAX, indented with text labels  
ISTD ----- STD, indented with text labels  
  
OBIB ----- AN, plus Bibliographic Data (original)  
OIBIB ----- OBIB, indented with text labels  
  
SBIB ----- BIB, no citations  
SIBIB ----- IBIB, no citations  
  
HIT ----- Fields containing hit terms  
HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
containing hit terms  
HITRN ----- HIT RN and its text modification  
HITSTR ----- HIT RN, its text modification, its CA index name, and  
its structure diagram  
HITSEQ ----- HIT RN, its text modification, its CA index name, its  
structure diagram, plus NTE and SEQ fields  
FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
its structure diagram  
FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
structure diagram, plus NTE and SEQ fields  
KWIC ----- Hit term plus 20 words on either side  
OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

All of the formats (except for SAM, SCAN, HIT, HITIND, HITRN, HITSTR, FHITSTR, HITSEQ, FHITSEQ, KWIC, and OCC) may be used with DISPLAY ACC to view a specified Accession Number.

ENTER DISPLAY FORMAT (BIB):abs ibib hitstr

L5 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
GI



AB Disclosed are benzoxazine compds. I ( $R_1$  = alkyl, alkenyl, alkoxy, OH, halo, or amino;  $R_2$  = single bond, alkylene, O, S, or  $SO_2$ ;  $R_3$  = H or C1-6 alkyl;  $m$  = 0-4;  $n$  = 1-4) and a method for preparing the same. These compds. are prepared by the reaction of a phenolic compound, an aromatic diamine compound,

and HCHO or paraformaldehyde. I are useful for crosslinking epoxy resins to give products with low water absorption.

ACCESSION NUMBER: 2004:293427 CAPLUS

DOCUMENT NUMBER: 140:304721

TITLE: Benzoxazine derivatives and method of preparing the same

INVENTOR(S): Hwang, Kuen-yuan; Tu, An-pang; Liao, Shyh Haw

PATENT ASSIGNEE(S): Taiwan

SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004068084	A1	20040408	US 2003-630195	20030729
JP 2004123703	A2	20040422	JP 2003-169185	20030613
JP 2004123742	A2	20040422	JP 2003-337382	20030929
			TW 2002-91122816	A 20021003

PRIORITY APPLN. INFO.:

OTHER SOURCE(S): MARPAT 140:304721

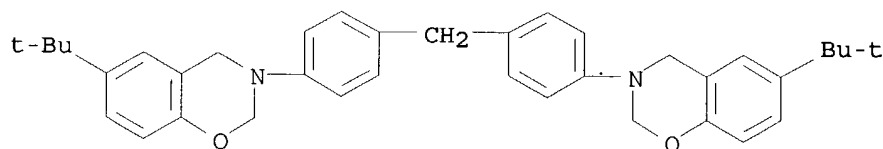
IT 676547-37-8P, PF 3900M60

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(PF 3900M60; benzoxazine derivs. from formaldehyde, bisaniline derivs., substituted phenols for crosslinking agents for epoxy resins providing products with low water absorption)

RN 676547-37-8 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[6-(1,1-dimethylethyl)-3,4-dihydro- (9CI) (CA INDEX NAME)



IT 677006-41-6P 677006-42-7P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)

(benzoxazine derivs. from formaldehyde, bisaniline derivs., substituted phenols for crosslinking agents for epoxy resins providing products



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with low water absorption)

RN 677006-41-6 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[6-(1,1-dimethylethyl)-3,4-dihydro-, polymer with BEB 580A75 and TNE 190A70 (9CI)  
(CA INDEX NAME)

CM 1

CRN 677005-87-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

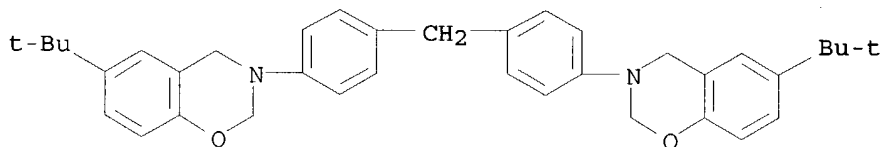
CM 2

CRN 677005-85-5  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 676547-37-8  
CMF C37 H42 N2 O2



RN 677006-42-7 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[6-(1,1-dimethylethyl)-3,4-dihydro-, polymer with 2,2'-[(1-methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxymethylene]]bis[oxirane] and TNE 190A70 (9CI) (CA INDEX NAME)

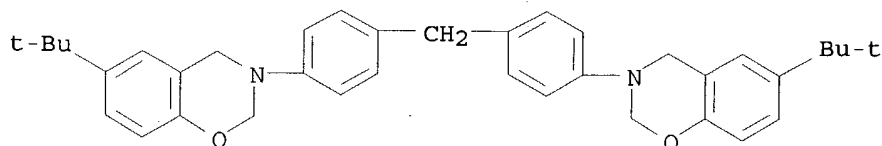
CM 1

CRN 677005-87-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 676547-37-8  
CMF C37 H42 N2 O2

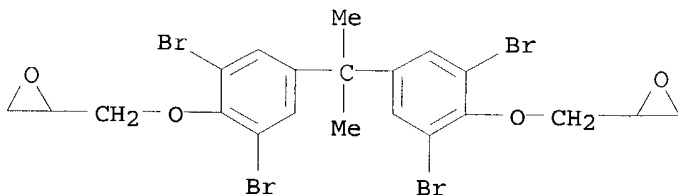


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CM 3

CRN 3072-84-2

CMF C21 H20 Br4 O4



IT 677006-43-8P 677006-44-9P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(control crosslinked material; benzoxazine derivs. from formaldehyde, bisaniline derivs., substituted phenols for crosslinking agents for epoxy resins providing products with low water absorption)

RN 677006-43-8 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, polymer with BEB 580A75 and TNE 190A70 (9CI) (CA INDEX NAME)

CM 1

CRN 677005-87-7

CMF Unspecified

CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 677005-85-5

CMF Unspecified

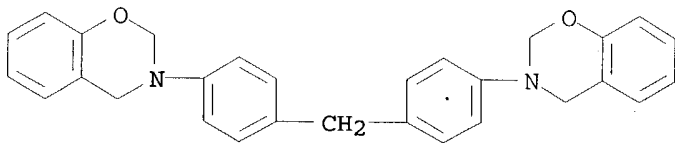
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 127959-98-2

CMF C29 H26 N2 O2



RN 677006-44-9 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, polymer with 2,2'-[(1-methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxymethylene]]bis[oxirane] and TNE 190A70 (9CI) (CA INDEX NAME)

CM 1

CRN 677005-87-7

CMF Unspecified

10/633,890 searched 12-3-04

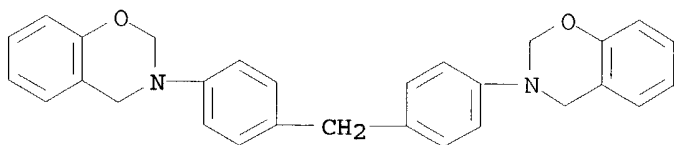
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 127959-98-2

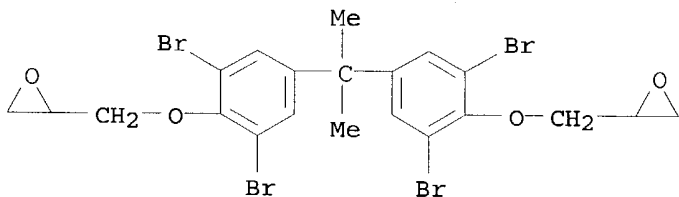
CMF C29 H26 N2 O2



CM 3

CRN 3072-84-2

CMF C21 H20 Br4 O4



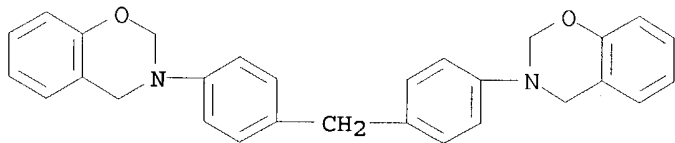
IT 127959-98-2P

RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)

(control crosslinker; benzoxazine derivs. from formaldehyde, bisaniline derivs., substituted phenols for crosslinking agents for epoxy resins providing products with low water absorption)

RN 127959-98-2 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI) (CA INDEX NAME)



=> d 15 abs ibib hitstr 2

L5 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AB The benzoxazine-based thermosetting resins showed high heat resistance and glass transition temperature and small volumetric shrinkage. Various bi-functional benzoxazines are prepared from corresponding bis-phenols for studies of their exothermic hardening behavior, thermal decomposition and thermomech. properties after curing at 200°C. Benzoxazines with electron-withdrawing spacer exhibit exothermic hardening at lower temperature from the results of DSC anal. Thermal decomposition of any cured benzoxazines

10/633,890 searched 12-3-04

commence in the vicinity of 300°C, despite their different structures in spacers. The alkyl substituent spacer-excluded benzoxazines showed  $\geq 50\%$  of residual weight at 700°C. Results of dynamic mech. anal. on benzoxazines demonstrated that the spacers affect their high modulus and glass transition temps.

ACCESSION NUMBER: 2003:969643 CAPLUS  
DOCUMENT NUMBER: 141:174779  
TITLE: Hardening temperature and heat-resistance properties of benzoxazine resin  
AUTHOR(S): Furukawa, Nobuyuki; Wada, Yukihiro; Yuasa, Masatoshi; Yokoyama, Naoki; Takeichi, Tsutomu  
CORPORATE SOURCE: R & D Laboratories, Nippon Steel Chemical Co., Ltd., Kitakyushu, 804-8503, Japan  
SOURCE: Nippon Setchaku Gakkaishi (2003), 39(11), 416-422  
CODEN: NSEGE7; ISSN: 0916-4812  
PUBLISHER: Nippon Setchaku Gakkai  
DOCUMENT TYPE: Journal  
LANGUAGE: Japanese

IT 127959-99-3P

RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(curing temperature, heat-resistance, and mech. strength of various spacer-containing benzoxazine resins)

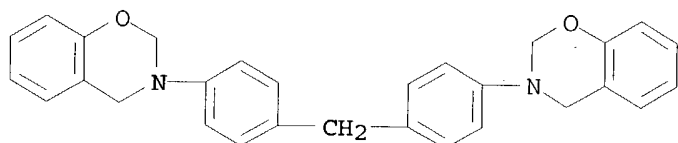
RN 127959-99-3 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

CMF C29 H26 N2 O2

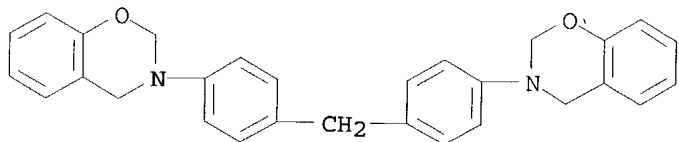


IT 127959-98-2P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(curing temperature, heat-resistance, and mech. strength of various spacer-containing benzoxazine resins)

RN 127959-98-2 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI)  
(CA INDEX NAME)



=> d 15 abs ibib hitstr 3

L5 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AB Curable compns. comprise a benzoxazine compound or resin in combination with

10/633,890 searched 12-3-04

at least one addnl. curable compound or resin. Optionally, the composition will further comprise a curing agent and/or a filler. These compns. have utility as adhesives, coatings and encapsulants, especially for use within the semiconductor fabrication industry, with particular utility as die attach adhesives, films, and underfill materials, such as no-flow underfills, capillary flow underfills, wafer level underfills, and as lead free solders.

ACCESSION NUMBER: 2003:696945 CAPLUS  
DOCUMENT NUMBER: 139:231401  
TITLE: Curable compositions containing benzoxazines, their manuf and uses  
INVENTOR(S): Musa, Osama M.  
PATENT ASSIGNEE(S): National Starch and Chemical Investment Holding Corporation, USA  
SOURCE: PCT Int. Appl., 45 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003072638	A1	20030904	WO 2003-US859	20030110
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW			
RW:	AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR			
US 6620905	B1	20030916	US 2002-80738	20020223
EP 1476493	A1	20041117	EP 2003-702069	20030110
R:	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK			
PRIORITY APPLN. INFO.:			US 2002-80738	A 20020223
			WO 2003-US859	W 20030110

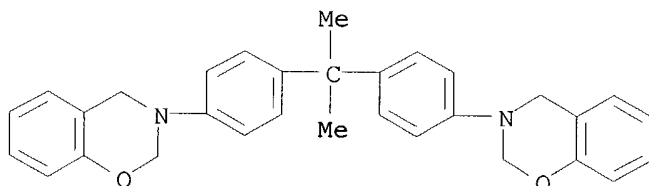
IT 591766-90-4 591766-91-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(curable compds.; manufacture of curable compns. containing benzoxazines useful

for adhesives used in semiconductor devices)

RN 591766-90-4 CAPLUS

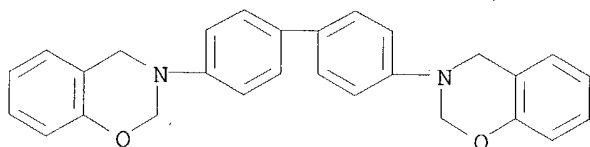
CN 2H-1,3-Benzoxazine, 3,3'-[(1-methylethylidene)di-4,1-phenylene]bis[3,4-dihydro- (9CI) (CA INDEX NAME)



RN 591766-91-5 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-[1,1'-biphenyl]-4,4'-diylbis[3,4-dihydro- (9CI) (CA INDEX NAME)

10/633,890 searched 12-3-04



REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d 15 abs ibib hitstr 4

L5 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AB A method for synthesis of 3,4-dihydro-3-pentafluorophenyl-2H-1,3-benzoxazine in a high yield derived from pentafluoroaniline is described. This fluorinated benzoxazine monomer has been developed as a potential precursor for a polybenzoxazine in electronic applications as well as others taking advantage of the low dielec. constant, low flammability, low refractive index, low coefficient of friction, and high glass transition temperature

of fluorinated compds. The traditional benzoxazine synthesis conditions are inappropriate for the synthesis of fluorinated benzoxazines when the fluorination is on the primary amine component. The pH value of the reaction medium is the controlling factor in the yield of the compound from weak amines. A strongly acidic condition is necessary for the synthesis of similar compds. from other very weak amines having a pKa lower than 3. A dramatic increase in the yield of benzoxazine ring has been observed when benzoxazines with very weak amines are synthesized in an acidic medium. The effects of solvent and pKa of phenol are also discussed. The synthesized compds. have been characterized by 1H NMR, FTIR, GPC and HPLC.

ACCESSION NUMBER: 2002:316212 CAPLUS

DOCUMENT NUMBER: 137:79264

TITLE: High yield synthesis of fluorinated benzoxazine monomers and their molecular characterization

AUTHOR(S): Liu, Jingping; Ishida, Hatsuo

CORPORATE SOURCE: Department of Macromolecular Science and Engineering, Case Western Reserve University, Cleveland, OH, 44106-7202, USA

SOURCE: Polymers & Polymer Composites (2002), 10(3), 191-203  
CODEN: PPOCEC; ISSN: 0967-3911

PUBLISHER: Rapra Technology Ltd.

DOCUMENT TYPE: Journal

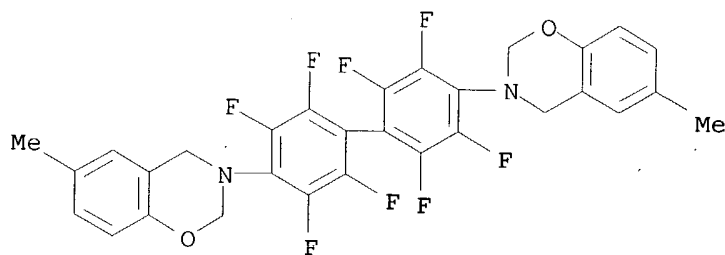
LANGUAGE: English

IT 440354-85-8P

RL: PRP (Properties); SPN (Synthetic preparation); PREP (Preparation)  
(monomer; synthesis and mol. characterization of fluorinated benzoxazine monomers from pentafluoroaniline)

RN 440354-85-8 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(2,2',3,3',5,5',6,6'-octafluoro[1,1'-biphenyl]-4,4'-diyl)bis[3,4-dihydro-6-methyl- (9CI) (CA INDEX NAME)



10/633,890 searched 12-3-04

REFERENCE COUNT: 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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L5 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AB Applications of benzoxazines as ablative resins were studied in this paper. Char yields of four kinds of cured benzoxazine precursors were measured by TGA and the data showed that the char yields of multi-benzoxazine PBOZ .precursors and di-benzoxazine MDABOZ, DRBOZ precursors were higher than 60%, but that of mono-benzoxazine ;SRBOZ precursors was relatively low. By introducing MDABOZ, DRBOZ and APPFBOZ precursors into SRBOZ resin system, resultant char yield was remarkably raised over 60%,and viscosity of the resin systems was still low. Small generator ablation tests indicated that cured PBOZ precursors exhibited good ablation-resistance and cured SRBOZ resin system modified by di-benzoxazine MDABOZ precursors, with low viscosity, was upgraded substantially in its ablation-resistance.

ACCESSION NUMBER: 2002:252636 CAPLUS

DOCUMENT NUMBER: 137:170195

TITLE: Primary investigation on ablative properties of benzoxazine resins

AUTHOR(S): Ji, Fenglong; Gu, Yi; Xie, Meili; Luo, Yongkang; Yu, Chunan; Cai, Jianqiang

CORPORATE SOURCE: College of Polymer Science and Engineering, Natl. Key Lab. for Polymer Engineering, Sichuan University, Chengdu, 610065, Peop. Rep. China

SOURCE: Yuhang Cailiao Gongyi (2002), 32(1), 25-29

CODEN: YCGOFH; ISSN: 1007-2330

PUBLISHER: Yuhang Cailiao Gongyi Bianjibu

DOCUMENT TYPE: Journal

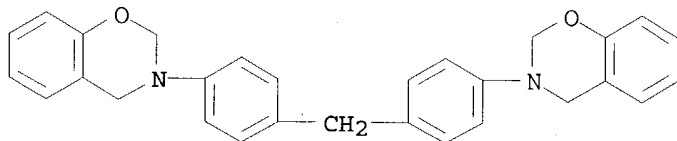
LANGUAGE: Chinese

IT 127959-98-2D, polymers

RL: CPS (Chemical process); PEP (Physical, engineering or chemical process); POF (Polymer in formulation); PROC (Process); USES (Uses) (primary investigation on ablative properties of benzoxazine resins)

RN 127959-98-2 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI) (CA INDEX NAME)



=> d 15 abs ibib hitstr 6

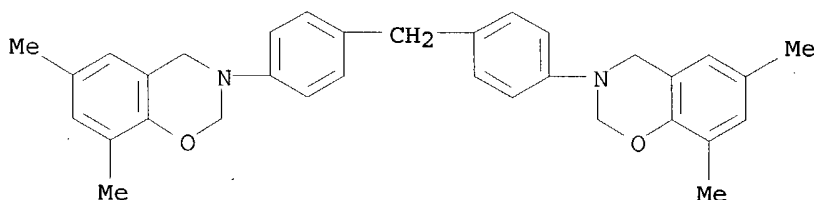
L5 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AB The reaction pathways on the curing reaction of 3-aryl substituted benzoxazine was investigated from the model reaction of 3,4-dihydro-6,8-dimethyl-3-phenyl-2H-1,3-benzoxazine (1) with 2,4-xyleneol (2). The reaction was carried out at 140°C for 5 h. N,N-Bis(2-hydroxy-3,5-dimethylbenzyl)phenylamine (3) and N-(2-hydroxy-3,5-dimethylbenzyl)phenylamine (4) were isolated as main products at an early stage. The reaction of 3 by the thermal treatment was studied by 1H-NMR spectroscopy. This result indicates that compound 3

10/633,890 searched 12-3-04

produces several inter- and intramol. rearrangement products. Based on these data, some possible reaction pathways were proposed. In the presence of p-toluenesulfonic acid monohydrate, 3,3'-(4,4'-methylenediphenyl)bis(3,4-dihydro-6,8-dimethyl-2H-1,3-benzoxazine) (9) was isolated as one of the intermediates.

ACCESSION NUMBER: 2000:290250 CAPLUS  
DOCUMENT NUMBER: 133:44296  
TITLE: The curing reaction of 3-aryl substituted benzoxazine  
AUTHOR(S): Hayakawa, Teruaki; Osanai, Yoshinori; Niizeki, Kouichi; Haba, Osamu; Ueda, Mitsuru  
CORPORATE SOURCE: Division of Human Sensing and Functional Sensor Engineering, Graduate School of Engineering, Yamagata University, Yamagata, 992-8510, Japan  
SOURCE: High Performance Polymers (2000), 12(1), 237-246  
CODEN: HPPOEX; ISSN: 0954-0083  
PUBLISHER: Institute of Physics Publishing  
DOCUMENT TYPE: Journal  
LANGUAGE: English  
IT 275818-34-3P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(intermediate; curing reaction of 3-aryl substituted benzoxazine as model compds. for phenolic resins)  
RN 275818-34-3 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-6,8-dimethyl- (9CI) (CA INDEX NAME)



REFERENCE COUNT: 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

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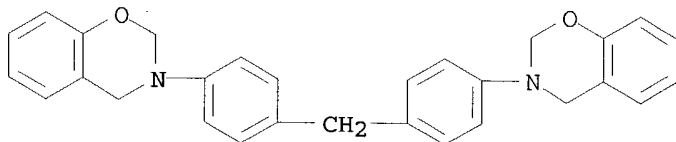
L5 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Adhesives for the title films contain thermosetting oxazine polymers having  $\geq 1$  1-oxa-3-azatetralin group in the mol., alone or in combination with a curable epoxy resin. Thus, a 0.035-mm Cu foil was attached to 0.02-mm Kapton film by means of a 67:33 N,N-methylenedi-p-phenylenebis(benzoxazine)-3,4-epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate composition and pressed 1 h at 200°. The tear strength was 3.8 N/mm.  
ACCESSION NUMBER: 1992:107765 CAPLUS  
DOCUMENT NUMBER: 116:107765  
TITLE: Gluing of polyimide films and circuit boards therefore  
INVENTOR(S): Schreiber, Herbert; Saur, Wolfgang  
PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.  
SOURCE: Ger., 6 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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10/633,890 searched 12-3-04

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DE 4016548 C1 19910912 DE 1990-4016548 19900523  
EP 458740 A1 19911127 EP 1991-810320 19910426  
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE  
CA 2042153 AA 19911124 CA 1991-2042153 19910509  
ZA 9103626 A 19920226 ZA 1991-3626 19910514  
JP 04227936 A2 19920818 JP 1991-114852 19910520  
US 5176780 A 19930105 US 1991-703194 19910520  
AU 9177265 A1 19920102 AU 1991-77265 19910523  
DE 1990-4016548 19900523  
PRIORITY APPLN. INFO.:  
IT 127959-98-2  
RL: USES (Uses)  
(adhesive compns. containing, for polyimide films and metal foils, in  
circuit board manufacture)  
RN 127959-98-2 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI)  
(CA INDEX NAME)



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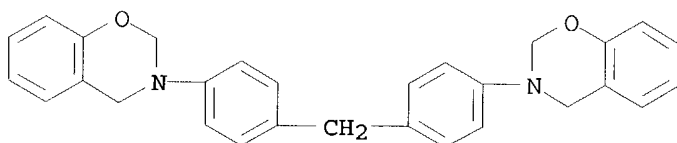
L5 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The title resins are prepared from ≥70% 1-oxa-3-azatetralins and  
≤30% halogenated epoxy resins. Thus, a composition of  
3,3'-(methylenedi-p-phenylene)bis(1-oxa-3-azatetralin) 90, brominated  
epoxy resin 10, and glass fibers 9 parts gave moldings with UL-94  
flammability rating V-0 (1st and 2nd burning time 4.0 and 48 s, resp.);  
vs. complete burning without the epoxy resin.  
ACCESSION NUMBER: 1991:681359 CAPLUS  
DOCUMENT NUMBER: 115:281359  
TITLE: Flame- and/or heat-resistant thermosetting resin  
preparation  
INVENTOR(S): Schreiber, Herbert; Burkart, Guenter; Knaus, Bruno  
PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.  
SOURCE: Ger., 11 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4016296	C1	19910905	DE 1990-4016296	19900521
EP 458739	A2	19911127	EP 1991-810319	19910426
EP 458739	A3	19930901		
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
ZA 9103434	A	19920226	ZA 1991-3434	19910507
CA 2042840	AA	19911122	CA 1991-2042840	19910517
CA 2042840	C	19961126		
JP 04227922	A2	19920818	JP 1991-114850	19910520
JP 3203385	B2	20010827		
AU 9177213	A1	19911121	AU 1991-77213	19910521
AU 636226	B2	19930422		

10/633,890 searched 12-3-04

US 5443911 A 19950822 US 1993-150975 19931112  
PRIORITY APPLN. INFO.: DE 1990-4016296 A 19900521  
US 1991-703193 B2 19910520

IT 127959-98-2  
RL: USES (Uses)  
(in fire- and heat-resistant halogenated epoxy resin moldings)  
RN 127959-98-2 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI)  
(CA INDEX NAME)



=> d 15 abs ibib hitstr 9

L5 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AB The title resins contain thermosetting compds. containing 1-oxa-3-azatetralin groups and immiscible fireproofing agents. Curing a mixture of 3,3'-(Methylenedi-p-phenylene)bis(3,4-dihydro-1,3-benzoxazine) 30, Al(OH)<sub>3</sub> 10, and glass fabric (110 g/m<sup>2</sup>) 10 parts at 200° gave a 0.9-mm plate with UL-94 flammability rating V-1.  
ACCESSION NUMBER: 1990:441934 CAPLUS  
DOCUMENT NUMBER: 113:41934  
TITLE: Fire- and heat-resistant plastics and their preparation  
INVENTOR(S): Schreiber, Herbert; Saur, Wolfgang  
PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.  
SOURCE: Eur. Pat. Appl., 10 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 356379	A1	19900228	EP 1989-810514	19890706
EP 356379	B1	19960320		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CH 675248	A	19900914	CH 1988-2733	19880718
CH 678531	A	19910930	CH 1989-2383	19890627
AT 135724	E	19960415	AT 1989-810514	19890706
ES 2088905	T3	19961001	ES 1989-810514	19890706
US 5021484	A	19910604	US 1989-376875	19890707
CA 1338298	A1	19960430	CA 1989-605649	19890711
AU 8938067	A1	19900118	AU 1989-38067	19890713
AU 615557	B2	19911003		
CN 1039602	A	19900214	CN 1989-106065	19890718
CN 1019810	B	19921230		
JP 02069567	A2	19900308	JP 1989-183852	19890718
JP 2952419	B2	19990927		
DD 284036	A5	19901031	DD 1989-330942	19890718
KR 130970	B1	19980413	KR 1989-10212	19890718
ZA 8905222	A	19900425	ZA 1989-5222	19890719
PRIORITY APPLN. INFO.:				
			CH 1988-2733	A 19880718
			CH 1989-2383	A 19890627

10/633,890 searched 12-3-04

IT 127959-99-3

RL: USES (Uses)

(fire- and heat-resistant, comps. of)

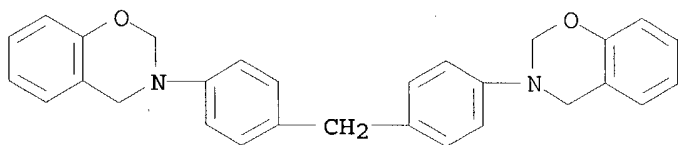
RN 127959-99-3 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

CMF C29 H26 N2 O2



IT 127960-00-3 127960-04-7 127960-05-8

RL: USES (Uses)

(fire- and heat-resistant, formulation of)

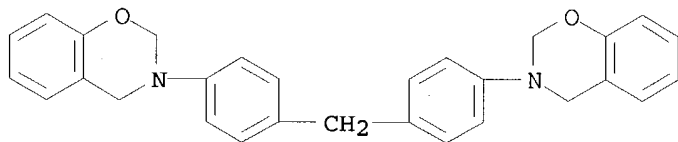
RN 127960-00-3 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

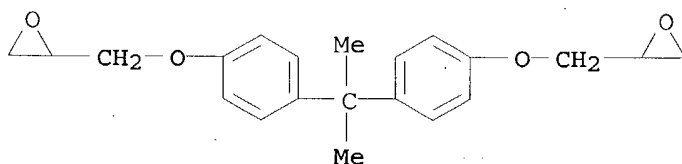
CMF C29 H26 N2 O2



CM 2

CRN 1675-54-3

CMF C21 H24 O4



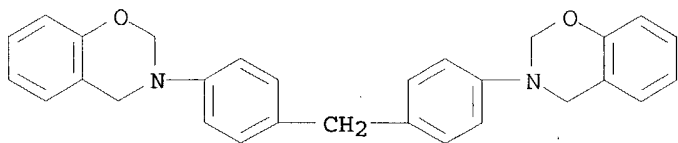
RN 127960-04-7 CAPLUS

CN 7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 7-oxabicyclo[4.1.0]hept-3-ylmethyl ester, polymer with 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-2H-1,3-benzoxazine] (9CI) (CA INDEX NAME)

CM 1

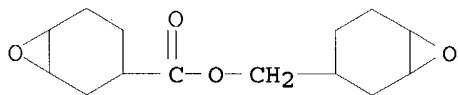
10/633,890 searched 12-3-04

CRN 127959-98-2  
CMF C29 H26 N2 O2



CM 2

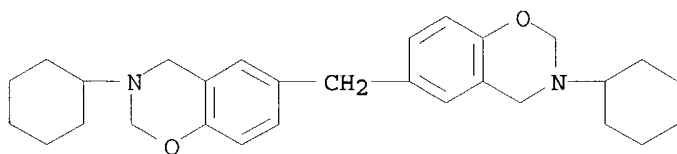
CRN 2386-87-0  
CMF C14 H20 O4



RN 127960-05-8 CAPLUS  
CN 2H-1,3-Benzoxazine, 6,6'-methylenebis[3-cyclohexyl-3,4-dihydro-, polymer  
with 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-2H-1,3-benzoxazine]  
(9CI) (CA INDEX NAME)

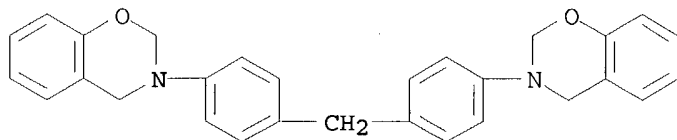
CM 1

CRN 127960-01-4  
CMF C29 H38 N2 O2



CM 2

CRN 127959-98-2  
CMF C29 H26 N2 O2



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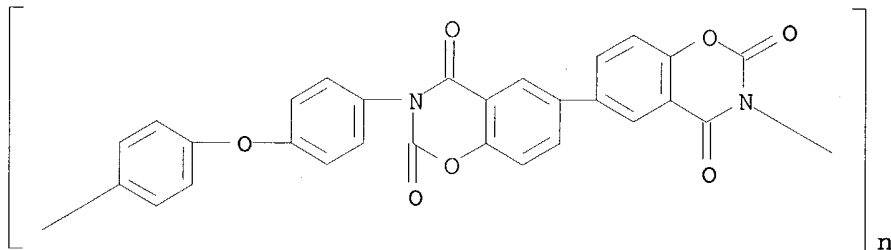
L5 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AB Molding compns. with good abrasion resistance comprise powdered aromatic

10/633,890 searched 12-3-04

polyimides 35-85, inorg. fibers (diameter 0.1-15  $\mu$ ) 10-40, and solid lubricants (average diameter 1-30  $\mu$ ) 5-25%. A mixture of powdered 3,3',4,4'-biphenyltetracarboxylic dianhydride-4,4'-oxydianiline copolymer 75, glass fibers 15, and powdered fluoropolymer (diameter 9 $\mu$ , KTL610) parts showed abrasion 0.01 mm/h at abrading rate 128 m/min and 100 kg/cm<sup>2</sup>-m-min.

ACCESSION NUMBER: 1987:555595 CAPLUS  
DOCUMENT NUMBER: 107:155595  
TITLE: Polyimide molding compositions  
INVENTOR(S): Takabayashi, Seiichiro; Kuramoto, Ken  
PATENT ASSIGNEE(S): Ube Industries, Ltd., Japan; NTN-Rulon Industries Co., Ltd.  
SOURCE: Jpn. Kokai Tokkyo Koho, 6 pp.  
CODEN: JKXXAF  
DOCUMENT TYPE: Patent  
LANGUAGE: Japanese  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 62132960	A2	19870616	JP 1985-274614	19851206
PRIORITY APPLN. INFO.:			JP 1985-274614	19851206
IT 28454-10-6				
RL: PEP (Physical, engineering or chemical process); PROC (Process) (moldings, containing inorg. fibers and solid lubricants, abrasion resistant)				
RN 28454-10-6 CAPLUS				
CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3'(4H,4'H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)				



=> d 15 abs ibib hitstr 11

L5 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
GI For diagram(s), see printed CA Issue.  
AB Naphthoxazines I, II, and five III (R = substituted phenyl, naphthyl) were prepared by reaction of EtO<sub>2</sub>CCl with the hydroxynaphthalenecarboxamides IV-VI, resp. III (R = C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>-m, C<sub>6</sub>H<sub>4</sub>Me-o, C<sub>6</sub>H<sub>3</sub>MeCl-2,4) and II lowered blood pressure in dogs and I had sedative and antiinflammatory activities.  
ACCESSION NUMBER: 1976:523834 CAPLUS  
DOCUMENT NUMBER: 85:123834  
TITLE: Syntheses and biological activity of 1,3-naphthoxazine-2,4-diones  
AUTHOR(S): Kekre, J. S.; Sunthakar, S. V.  
CORPORATE SOURCE: Dep. Chem. Technol., Univ. Bombay, Bombay, India  
SOURCE: Indian Journal of Chemistry, Section B: Organic Chemistry Including Medicinal Chemistry (1976), 14B(3), 212-13  
CODEN: IJSBDB; ISSN: 0376-4699  
DOCUMENT TYPE: Journal

10/633,890 searched 12-3-04

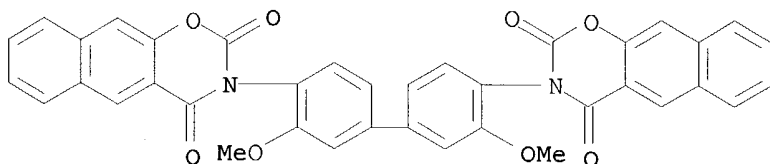
LANGUAGE: English

IT 60478-09-3P

RL: BAC (Biological activity or effector, except adverse); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation and hypotensive activity of)

RN 60478-09-3 CAPLUS

CN 2H-Naphth[2,3-e]-1,3-oxazine-2,4(3H)-dione, 3,3'-(3,3'-dimethoxy[1,1'-biphenyl]-4,4'-diyl)bis- (9CI) (CA INDEX NAME)



=> d 15 abs ibib hitstr 12

L5 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

GI For diagram(s), see printed CA Issue.

AB Polymer I [57829-65-9] and 10 similar polymers containing 1,3-benzoxazine-2,4-dione structures had good heat resistance, pressure insensitivity, and hydrolysis resistance in acid and alkali and were useful for desalting seawater, brackish water, and wastewater by reverse osmosis. Thus, a mixture of I 15, N-methylpyrrolidone 82, and LiCl 3 g was cast as a 300  $\mu$  film, heated 20 min at 70°, and used at a flow rate of 60 l./m<sup>2</sup>/day to remove 97.5% of the salt from a 3.5% NaCl solution (containing HCl to give pH 1) at 130 atmospheric

ACCESSION NUMBER: 1976:45569 CAPLUS

DOCUMENT NUMBER: 84:45569

TITLE: Asymmetric semipermeable membranes of poly-1,3-benzoxazine-2,4-diones

INVENTOR(S): Knickel, Birger; Binsack, Rudolf; Rudolph, Hans; Rosenkranz, Hans J.; Bottenbruch, Ludwig

PATENT ASSIGNEE(S): Bayer A.-G., Fed. Rep. Ger.

SOURCE: Ger. Offen., 18 pp.

CODEN: GWXXBX

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2418996	A1	19751030	DE 1974-2418996	19740419
US 4036748	A	19770719	US 1975-568605	19750416
BE 828035	A1	19751017	BE 1975-155486	19750417
SE 7504451	A	19751020	SE 1975-4451	19750417
SE 403968	C	19790104		
SE 403968	B	19780918		
FI 7501157	A	19751020	FI 1975-1157	19750417
JP 50141587	A2	19751114	JP 1975-45936	19750417
JP 57041965	B4	19820906		
AT 7502947	A	19770915	AT 1975-2947	19750417
GB 1496816	A	19780105	GB 1975-15853	19750417
CA 1070065	A1	19800122	CA 1975-224902	19750417
DK 7501678	A	19751020	DK 1975-1678	19750418
NL 7504661	A	19751021	NL 1975-4661	19750418

10/633,890 searched 12-3-04

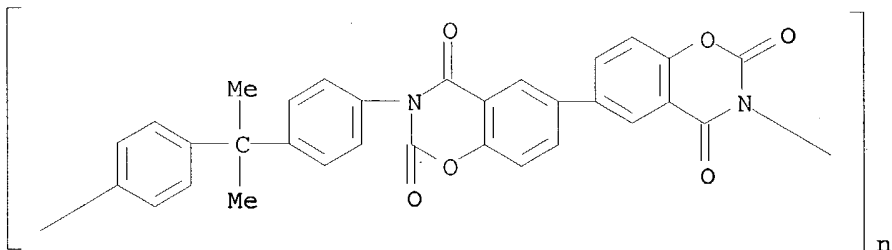
FR 2268039	A1	19751114	FR 1975-12233	19750418
CH 610915	A	19790515	CH 1975-5018	19750418
PRIORITY APPLN. INFO.:			DE 1974-2418996	19740419
IT	28454-11-7 57829-63-7 57829-64-8			
	57829-65-9			

RL: USES (Uses)

(desalination membranes, heat- and acid-resistant)

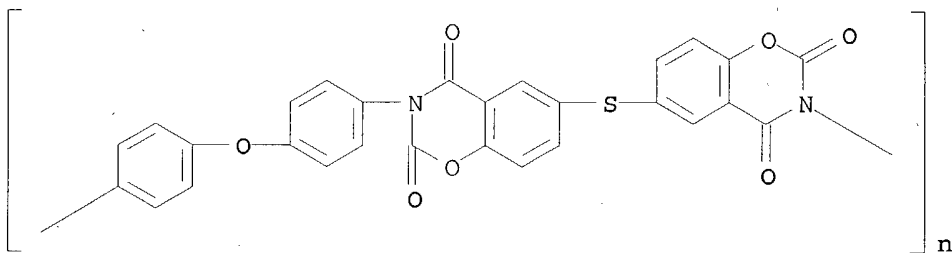
RN 28454-11-7 CAPLUS

CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3' (4H,4'H)-diyl)-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



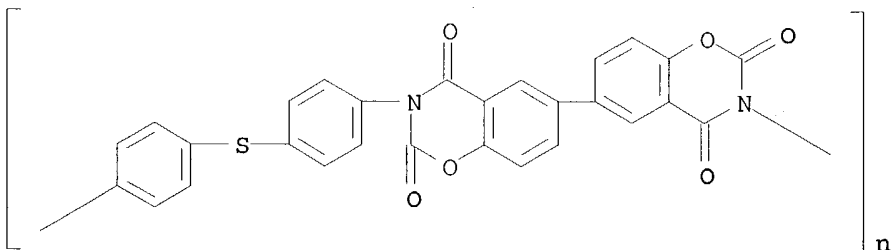
RN 57829-63-7 CAPLUS

CN Poly[(2,4-dioxo-2H-1,3-benzoxazine-3,6, (4H)-diyl)thio(2,4-dioxo-2H-1,3-benzoxazine-6,3, (4H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



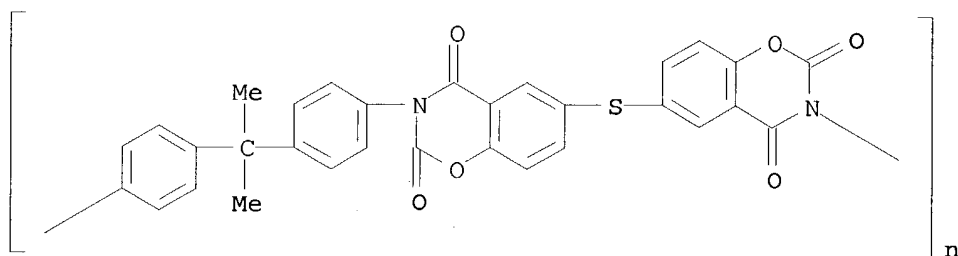
RN 57829-64-8 CAPLUS

CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3' (4H,4'H)-diyl)-1,4-phenylenethio-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 57829-65-9 CAPLUS

CN Poly[(2,4-dioxo-2H-1,3-benzoxazine-3,6 (4H)-diyl)thio(2,4-dioxo-2H-1,3-benzoxazine-6,3 (4H)-diyl)-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



=&gt; d 15 abs ibib hitstr 13

L5 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
 AB 1,3-Benzoxazine-2,4-dione group-containing polymers, e.g. 4,4'-bis[(phenoxy-carbonyl)amino]diphenyl ether-diphenyl 4,4'-dihydroxybiphenyl-3,3'-dicarboxylate copolymer (I) [51821-77-3], were prepared and used as heat-resistant films. Transparent I films embrittled in the air after 2 months, 4 months, and 2 years at 275, 250, and 235.deg., resp. Thus, 42.64 g di-Ph 4,4'-dihydroxybiphenyl-3,3'-dicarboxylate and 80 mg 1,4-diazabicyclo[2.2.2]octane were added at 80.deg. to 44.04 g (4-PhO<sub>2</sub>CNHC<sub>6</sub>H<sub>4</sub>)<sub>2</sub>O in 275 ml Me<sub>2</sub>SO and the mixture was heated 40 min at 100-4.deg. to give 98% I of relative viscosity 2.80 (1 g in 100 ml H<sub>2</sub>SO<sub>4</sub>).

ACCESSION NUMBER: 1974:464551 CAPLUS  
 DOCUMENT NUMBER: 81:64551  
 TITLE: Heat-resistant poly(1,3-benzoxazine-2,4-diones)  
 INVENTOR(S): Binsack, Rudolf; Bottenbruch, Ludwig  
 PATENT ASSIGNEE(S): Bayer A.-G.  
 SOURCE: Ger. Offen., 16 pp.  
 CODEN: GWXXBX  
 DOCUMENT TYPE: Patent  
 LANGUAGE: German  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 2232467	A1	19740110	DE 1972-2232467	19720701
FR 2190872	A1	19740201	FR 1973-24058	19730629
FR 2190872	B1	19790504		
JP 49052899	A2	19740522	JP 1973-72999	19730629
GB 1408961	A	19751008	GB 1973-31470	19730702
			DE 1972-2232467	19720701

PRIORITY APPLN. INFO.:

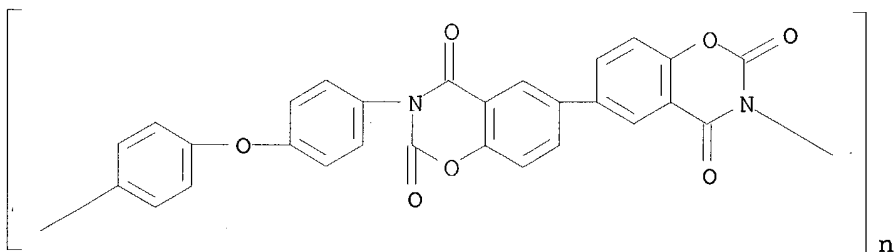
IT 28454-10-6

RL: PEP (Physical, engineering or chemical process); PROC (Process)  
 (heat-resistant)

RN 28454-10-6 CAPLUS

CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3'-(4H,4'H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)





=> d 15 abs ibib hitstr 14

L5 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AB High-mol.-weight film-forming polybenzoxazinediones are prepared from di-Ph esters of O,O-dihydroxyaryldicarboxylic acids and diisocyanates, e.g. the di-Ph ester of 4,4'-dihydroxybiphenyldicarboxylic acid and diphenyl ether-4,4'-diisocyanate in Me<sub>2</sub>SO solution with tertiary amines as catalyst in an 1-step reaction which comprises the polyaddn. and the polycyclization step. The polymers have good long-term thermal stability at high temps. Their softening range is >390°. They have good mech. and elec. properties over a temperature range of -180 to 300°. Films can be oriented and crystallized by stretching. Because of their solubility in polar solvents, they can be worked up to shaped articles by solution casting. Polybenzoxazinedione films can be used as insulating films for high-temperature uses.

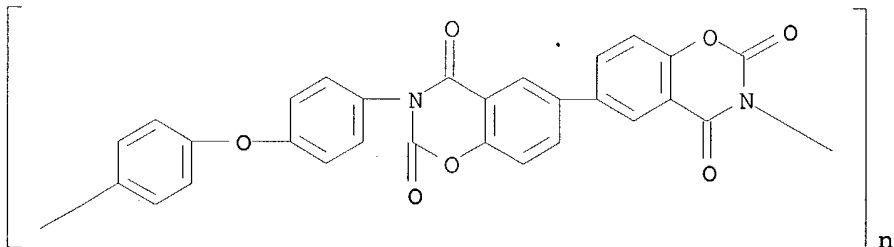
ACCESSION NUMBER: 1970:499270 CAPLUS  
DOCUMENT NUMBER: 73:99270  
TITLE: Poly(benzoxazinediones), a class of high temperature plastics  
AUTHOR(S): Bottenbruch, Ludwig  
CORPORATE SOURCE: Wiss. Hauptlab., Farbenfabriken Bayer A.-G., Uerdingen, Fed. Rep. Ger.  
SOURCE: Angewandte Makromolekulare Chemie (1970), 13, 109-25  
CODEN: ANMCBO; ISSN: 0003-3146  
DOCUMENT TYPE: Journal  
LANGUAGE: German

IT 28454-10-6P 28454-11-7P 28454-16-2P  
28454-20-8P

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)

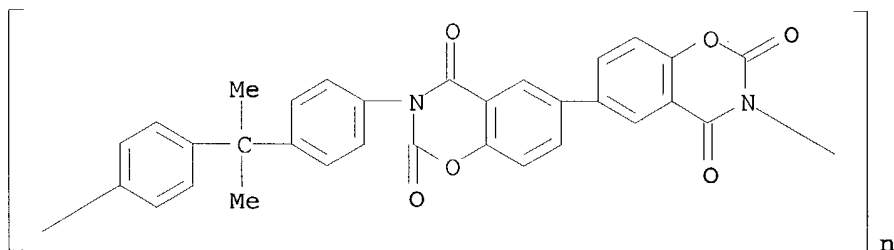
RN 28454-10-6 CAPLUS

CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3'-(4H,4'H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



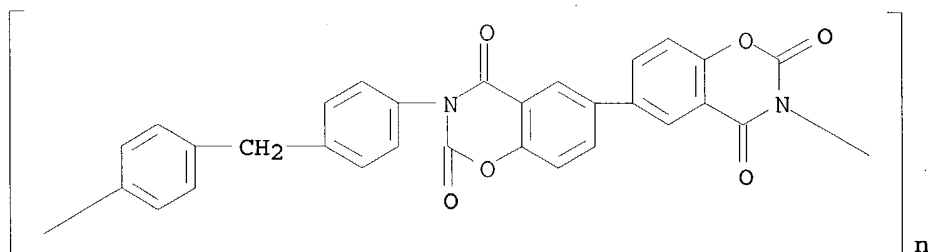
RN 28454-11-7 CAPLUS

CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3'-(4H,4'H)-diyl)-1,4-phenylene(1-methylethylidene)-1,4-phenylene] (9CI) (CA INDEX NAME)



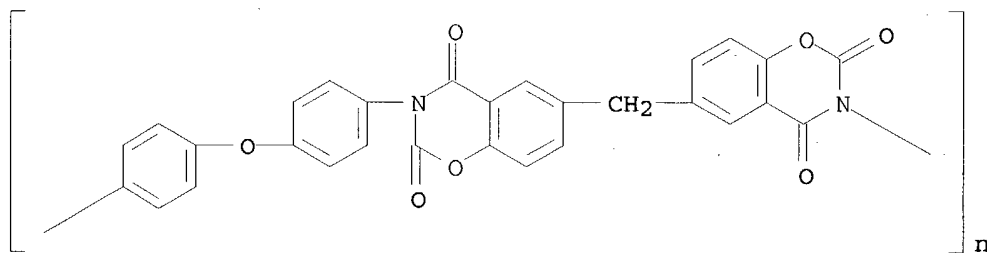
RN 28454-16-2 CAPLUS

CN Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3'(4H,4'H)-diyl)-1,4-phenylenemethylene-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 28454-20-8 CAPLUS

CN Poly[(2,4-dioxo-2H-1,3-benzoxazine-3,6(4H)-diyl)methylene(2,4-dioxo-2H-1,3-benzoxazine-6,3(4H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



=> d 15 abs ibib hitstr 15

L5 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

GI For diagram(s), see printed CA Issue.

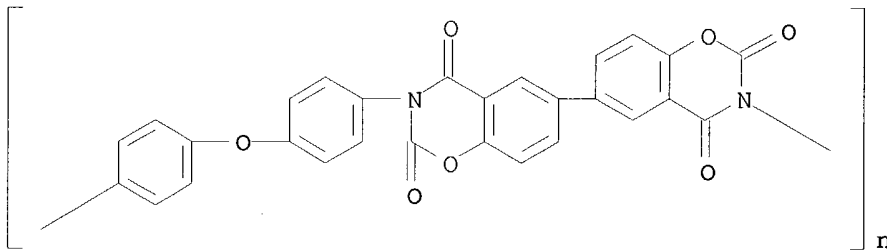
AB The title compds. with excellent heat stability and aging resistance, are prepared by treating a di-o-hydroxyarenedicarboxylate with a diisocyanate in the presence of a tertiary amine. Thus, to a solution of 18.25 parts diphenyl ether 4,4'-diisocyanate in 431 parts anhydrous Me2SO, 25.35 parts di-Ph resorcinol-4,6-dicarboxylate (II) was added, the mixture refluxed 3 hrs. at 105° in the presence of 0.02 part triethylenediamine, diluted with an equal volume Me2SO and ethylene chloride, filtered in vacuo, and the fine powder separated, washed with MeOH, and dried in vacuo at 100° to give I with a relative viscosity 2.9 (1%, HCONMe2, 25°). I was converted into transparent and colorless films having a tensile strength 1000 kg./cm.2 and elongation 70%. Other diisocyanates used were tolylene

10/633,890 searched 12-3-04

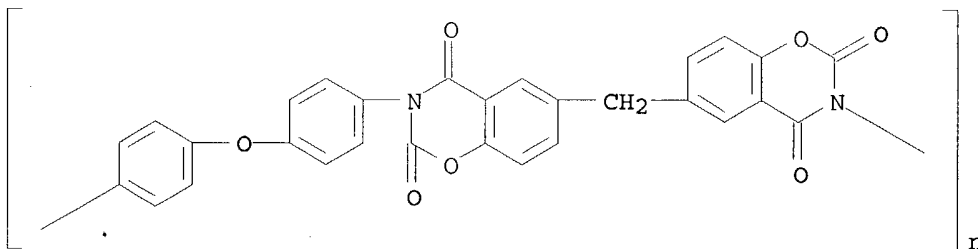
2,4-diisocyanate and naphthylene 1,5-diisocyanate. Di-Ph hydroquinone-2,5-dicarboxylate, di-Ph 4,4'-dihydroxybiphenyl-3,3'-dicarboxylate, di-Ph 4,4'-dihydroxydiphenylmethane-3,3'-dicarboxylate, and di-Ph 4,4'-dihydroxy-3,3'-dimethyldiphenylmethane-5,5-dicarboxylate were used instead of II.

ACCESSION NUMBER: 1969:4810 CAPLUS  
DOCUMENT NUMBER: 70:4810  
TITLE: 2H-1,3-Benzoxazine-2,4(3H)-dione aromatic polymers  
PATENT ASSIGNEE(S): Farbenfabriken Bayer A.-G.  
SOURCE: Fr., 5 pp.  
CODEN: FRXXAK  
DOCUMENT TYPE: Patent  
LANGUAGE: French  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 1507149		19671222		
DE 1595579			DE	
GB 1173608			GB	
US 3510454		19700000	US	
PRIORITY APPLN. INFO.:			DE	19660103
IT	28454-10-6P	28454-20-8P	28700-14-3P	
	RL: PREP (Preparation) (preparation of)			
RN	28454-10-6 CAPLUS			
CN	Poly[(2,2',4,4'-tetraoxo[6,6'-bi-2H-1,3-benzoxazine]-3,3'(4H,4'H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)			

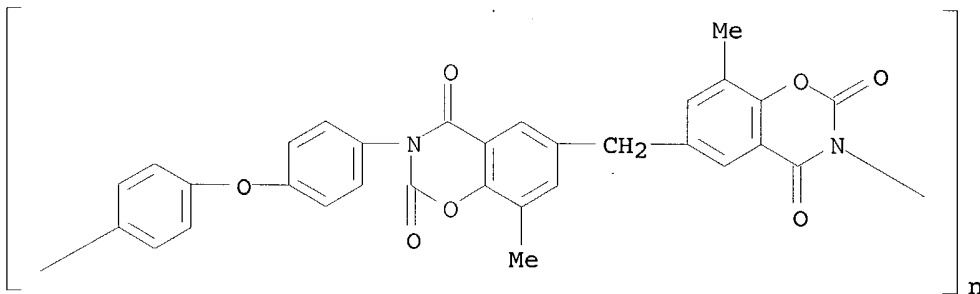


RN 28454-20-8 CAPLUS  
CN Poly[(2,4-dioxo-2H-1,3-benzoxazine-3,6(4H)-diyl)methylene(2,4-dioxo-2H-1,3-benzoxazine-6,3(4H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)



RN 28700-14-3 CAPLUS  
CN Poly[(8-methyl-2,4-dioxo-2H-1,3-benzoxazine-3,6(4H)-diyl)methylene(8-methyl-2,4-dioxo-2H-1,3-benzoxazine-6,3(4H)-diyl)-1,4-phenyleneoxy-1,4-phenylene] (9CI) (CA INDEX NAME)

10/633,890 searched 12-3-04



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NEWS	6	SEP 27 STANDARDS will no longer be available on STN

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NEWS 7 SEP 27 SWETSCAN will no longer be available on STN  
NEWS 8 OCT 28 KOREAPAT now available on STN  
NEWS 9 NOV 18 Current-awareness alerts, saved answer sets, and current  
search transcripts to be affected by CERAB, COMPUAB, ELCOM,  
and SOLIDSTATE reloads  
NEWS 10 NOV 30 PHAR reloaded with additional data  
NEWS 11 DEC 01 LISA now available on STN

NEWS EXPRESS OCTOBER 29 CURRENT WINDOWS VERSION IS V7.01A, CURRENT  
MACINTOSH VERSION IS V6.0c(ENG) AND V6.0Jc(JP),  
AND CURRENT DISCOVER FILE IS DATED 11 AUGUST 2004  
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DICTIONARY FILE UPDATES: 1 DEC 2004 HIGHEST RN 791553-15-6

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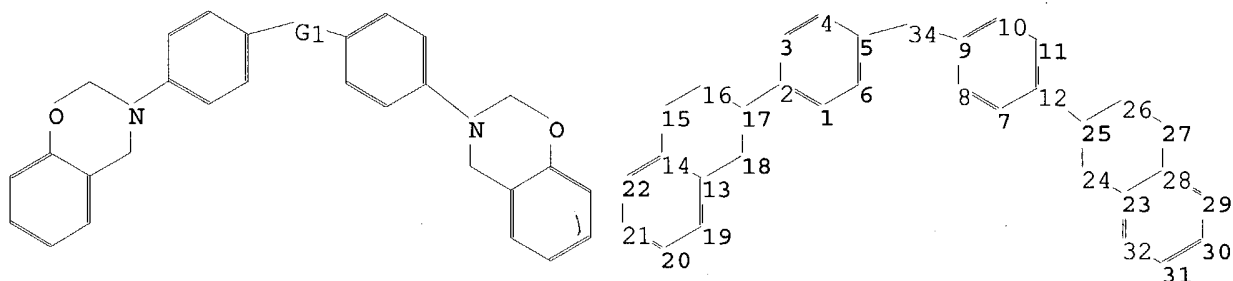
Experimental and calculated property data are now available. For more  
information enter HELP PROP at an arrow prompt in the file or refer  
to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

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Uploading C:\Program Files\Stnexp\Queries\10412126 b.str

10/633,890 searched 12-3-04



chain nodes :

34

ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 31 32

chain bonds :

2-17 5-34 9-34 12-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18  
13-19 14-15 14-22 15-16 16-17 17-18 19-20 20-21 21-22 23-24 23-28 23-32  
24-25 25-26 26-27 27-28 28-29 29-30 30-31 31-32

exact/norm bonds :

2-17 5-34 9-34 12-25 13-18 14-15 15-16 16-17 17-18 23-24 24-25 25-26  
26-27 27-28

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-19  
14-22 19-20 20-21 21-22 23-28 23-32 28-29 29-30 30-31 31-32

G1:O,S,SO2,Ak

Match level :

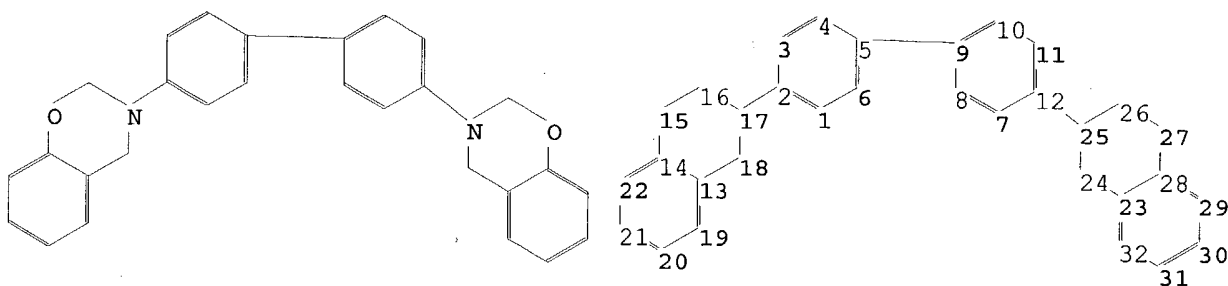
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11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
20:Atom 21:Atom 22:Atom 23:Atom 24:Atom 25:Atom 26:Atom 27:Atom 28:Atom  
29:Atom 30:Atom 31:Atom 32:Atom 34:CLASS

L1 STRUCTURE UPLOADED

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10/633,890 searched 12-3-04



ring nodes :

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23  
24 25 26 27 28 29 30 31 32

chain bonds :

2-17 5-9 12-25

ring bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-18  
13-19 14-15 14-22 15-16 16-17 17-18 19-20 20-21 21-22 23-24 23-28 23-32  
24-25 25-26 26-27 27-28 28-29 29-30 30-31 31-32

exact/norm bonds :

2-17 12-25 13-18 14-15 15-16 16-17 17-18 23-24 24-25 25-26 26-27 27-28

exact bonds :

5-9

normalized bonds :

1-2 1-6 2-3 3-4 4-5 5-6 7-8 7-12 8-9 9-10 10-11 11-12 13-14 13-19  
14-22 19-20 20-21 21-22 23-28 23-32 28-29 29-30 30-31 31-32

Match level :

1:Atom 2:Atom 3:Atom 4:Atom 5:Atom 6:Atom 7:Atom 8:Atom 9:Atom 10:Atom  
11:Atom 12:Atom 13:Atom 14:Atom 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom  
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29:Atom 30:Atom 31:Atom 32:Atom

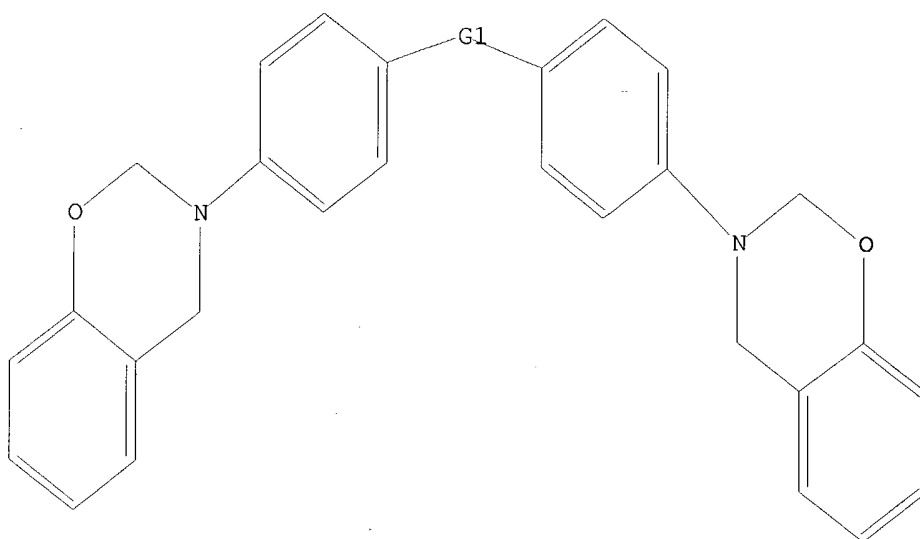
L2 STRUCTURE UPLOADED

=> d 11

L1 HAS NO ANSWERS

L1 STR

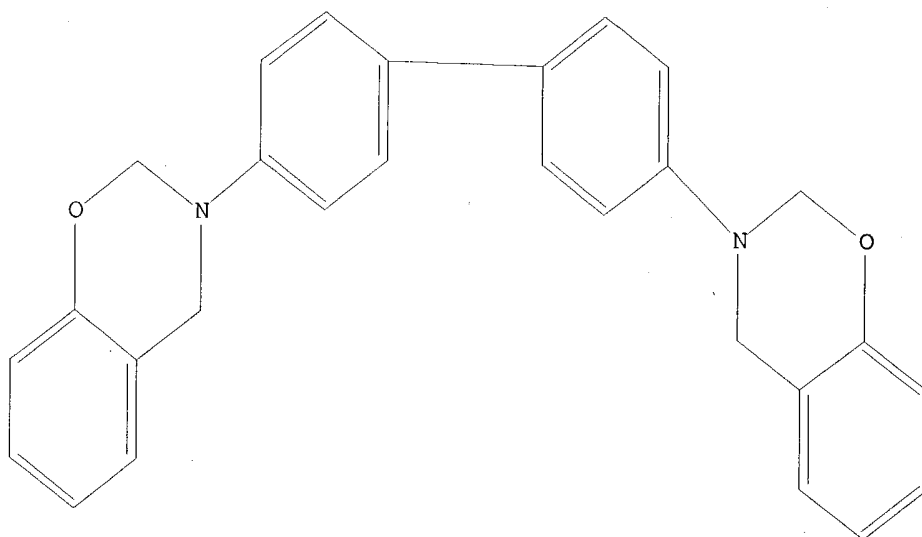
10/633,890 searched 12-3-04



G1 O,S,SO2,Ak

Structure attributes must be viewed using STN Express query preparation.

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L2 HAS NO ANSWERS  
L2 STR



Structure attributes must be viewed using STN Express query preparation.

=> s full (11 or 12)  
FULL SEARCH INITIATED 11:22:02 FILE 'REGISTRY'  
FULL SCREEN SEARCH COMPLETED - 784 TO ITERATE

100.0% PROCESSED 784 ITERATIONS  
SEARCH TIME: 00.00.01

23 ANSWERS



10/633,890 searched 12-3-04

L3 23 SEA SSS FUL (L1 OR L2)

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SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

236.92

237.13

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FILE COVERS 1907 - 3 Dec 2004 VOL 141 ISS 23

FILE LAST UPDATED: 1 Dec 2004 (20041201/ED)

This file contains CAS Registry Numbers for easy and accurate substance identification.

=> s l3 and (epox? or polyepox? or diepox? or polyglycidyl? or diglycidyl? or ?glycidylether or glycidylether?)

15 L3

291602 EPOX?

4351 POLYEPOX?

5825 DIEPOX?

2168 POLYGLYCIDYL?

16680 DIGLYCIDYL?

237 ?GLYCIDYLETHER

36 GLYCIDYLETHER?

L4 5 L3 AND (EPOX? OR POLYEPOX? OR DIEPOX? OR POLYGLYCIDYL? OR DIGLYCIDYL? OR ?GLYCIDYLETHER OR GLYCIDYLETHER?)

=> s l4 and phosph?

1629896 PHOSPH?

L5

1 L4 AND PHOSPH?

=> d l5 abs ibib hitstr

L5 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2004 ACS on STN

AB The title resins contain thermosetting compds. containing 1-oxa-3-azatetralin groups and immiscible fireproofing agents. Curing a mixture of 3,3'-(Methylenedi-p-phenylene)bis(3,4-dihydro-1,3-benzoxazine) 30, Al(OH)<sub>3</sub> 10, and glass fabric (110 g/m<sup>2</sup>) 10 parts at 200° gave a 0.9-mm plate with UL-94 flammability rating V-1.

ACCESSION NUMBER: 1990:441934 CAPLUS

DOCUMENT NUMBER: 113:41934

TITLE: Fire- and heat-resistant plastics and their preparation

INVENTOR(S): Schreiber, Herbert; Saur, Wolfgang

PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.

SOURCE: Eur. Pat. Appl., 10 pp.

10/633,890 searched 12-3-04

DOCUMENT TYPE: CODEN: EPXXDW  
Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 356379	A1	19900228	EP 1989-810514	19890706
EP 356379	B1	19960320		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CH 675248	A	19900914	CH 1988-2733	19880718
CH 678531	A	19910930	CH 1989-2383	19890627
AT 135724	E	19960415	AT 1989-810514	19890706
ES 2088905	T3	19961001	ES 1989-810514	19890706
US 5021484	A	19910604	US 1989-376875	19890707
CA 1338298	A1	19960430	CA 1989-605649	19890711
AU 8938067	A1	19900118	AU 1989-38067	19890713
AU 615557	B2	19911003		
CN 1039602	A	19900214	CN 1989-106065	19890718
CN 1019810	B	19921230		
JP 02069567	A2	19900308	JP 1989-183852	19890718
JP 2952419	B2	19990927		
DD 284036	A5	19901031	DD 1989-330942	19890718
KR 130970	B1	19980413	KR 1989-10212	19890718
ZA 8905222	A	19900425	ZA 1989-5222	19890719
PRIORITY APPLN. INFO.:			CH 1988-2733	A 19880718
			CH 1989-2383	A 19890627

IT 127959-99-3

RL: USES (Uses)

(fire- and heat-resistant, compns. of)

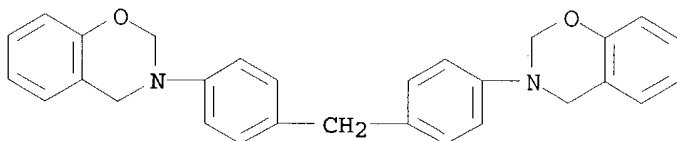
RN 127959-99-3 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

CMF C29 H26 N2 O2



IT 127960-00-3 127960-04-7 127960-05-8

RL: USES (Uses)

(fire- and heat-resistant, formulation of)

RN 127960-00-3 CAPLUS

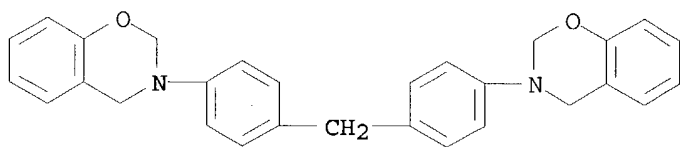
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

CMF C29 H26 N2 O2

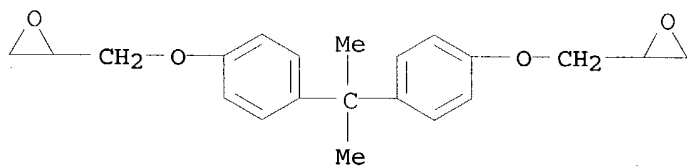
10/633,890 searched 12-3-04



CM 2

CRN 1675-54-3

CMF C21 H24 O4



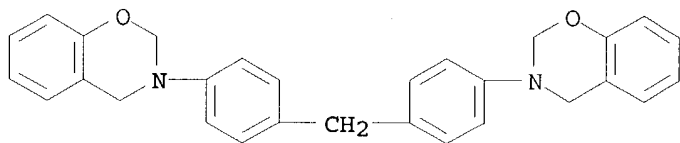
RN 127960-04-7 CAPLUS

CN 7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 7-oxabicyclo[4.1.0]hept-3-ylmethyl ester, polymer with 3,3'-(methylenebis(4,1-phenylene))bis[3,4-dihydro-2H-1,3-benzoxazine] (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

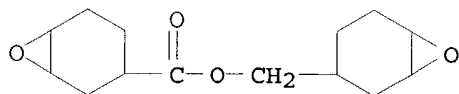
CMF C29 H26 N2 O2



CM 2

CRN 2386-87-0

CMF C14 H20 O4



RN 127960-05-8 CAPLUS

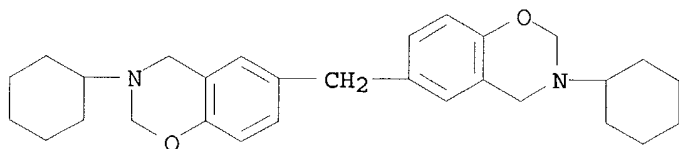
CN 2H-1,3-Benzoxazine, 6,6'-methylenebis[3-cyclohexyl-3,4-dihydro-, polymer with 3,3'-(methylenebis(4,1-phenylene))bis[3,4-dihydro-2H-1,3-benzoxazine] (9CI) (CA INDEX NAME)

CM 1

CRN 127960-01-4

CMF C29 H38 N2 O2

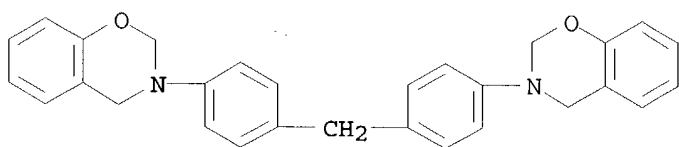
10/633,890 searched 12-3-04



CM 2

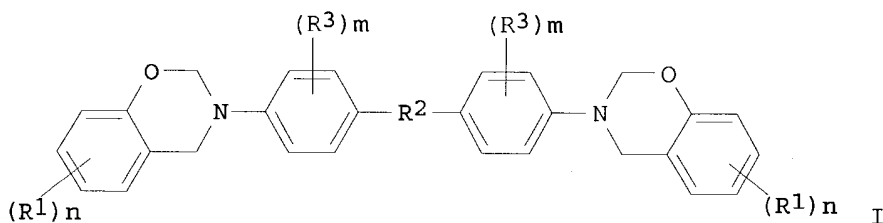
CRN 127959-98-2

CMF C29 H26 N2 O2



=> d 14 abs ibib hitstr 1-5

L4 ANSWER 1 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN  
GI



AB Disclosed are benzoxazine compds. I ( $R_1$  = alkyl, alkenyl, alkoxy, OH, halo, or amino;  $R_2$  = single bond, alkylene, O, S, or  $SO_2$ ;  $R_3$  = H or C1-6 alkyl;  $m$  = 0-4;  $n$  = 1-4) and a method for preparing the same. These compds. are prepared by the reaction of a phenolic compound, an aromatic diamine compound,

and HCHO or paraformaldehyde. I are useful for crosslinking epoxy resins to give products with low water absorption.

ACCESSION NUMBER: 2004:293427 CAPLUS

DOCUMENT NUMBER: 140:304721

TITLE: Benzoxazine derivatives and method of preparing the same

INVENTOR(S): Hwang, Kuen-yuan; Tu, An-pang; Liao, Shyh Haw

PATENT ASSIGNEE(S): Taiwan

SOURCE: U.S. Pat. Appl. Publ., 15 pp.

CODEN: USXXCO

DOCUMENT TYPE: Patent

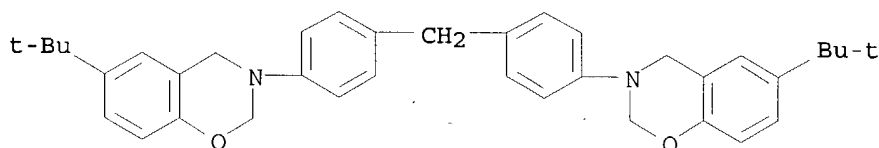
LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

10/633,890 searched 12-3-04

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004068084	A1	20040408	US 2003-630195	20030729
JP 2004123703	A2	20040422	JP 2003-169185	20030613
JP 2004123742	A2	20040422	JP 2003-337382	20030929
PRIORITY APPLN. INFO.:			TW 2002-91122816	A 20021003
OTHER SOURCE(S):			MARPAT 140:304721	
IT 676547-37-8P, PF 3900M60				
RL: IMF (Industrial manufacture); MOA (Modifier or additive use); PREP (Preparation); USES (Uses)				
(PF 3900M60; benzoxazine derivs. from formaldehyde, bisaniline derivs., substituted phenols for crosslinking agents for <b>epoxy</b> resins providing products with low water absorption)				
RN	676547-37-8 CAPLUS			
CN	2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[6-(1,1-dimethylethyl)-3,4-dihydro- (9CI) (CA INDEX NAME)			



IT 677006-41-6P 677006-42-7P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(benzoxazine derivs. from formaldehyde, bisaniline derivs.; substituted phenols for crosslinking agents for **epoxy** resins providing products with low water absorption)

RN 677006-41-6 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[6-(1,1-dimethylethyl)-3,4-dihydro-, polymer with BEB 580A75 and TNE 190A70 (9CI) (CA INDEX NAME)

CM 1

CRN 677005-87-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

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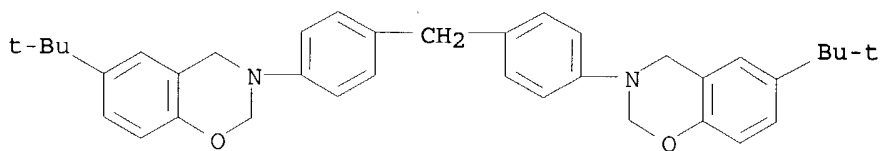
CRN 677005-85-5  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 676547-37-8  
CMF C37 H42 N2 O2

10/633,890 searched 12-3-04



RN 677006-42-7 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[6-(1,1-dimethylethyl)-3,4-dihydro-, polymer with 2,2'-[(1-methylethylidene)bis[(2,6-dibromo-4,1-phenylene)oxymethylene]]bis[oxirane] and TNE 190A70 (9CI) (CA INDEX NAME)

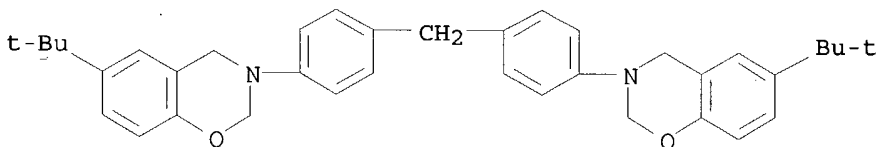
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CMF Unspecified  
CCI PMS, MAN

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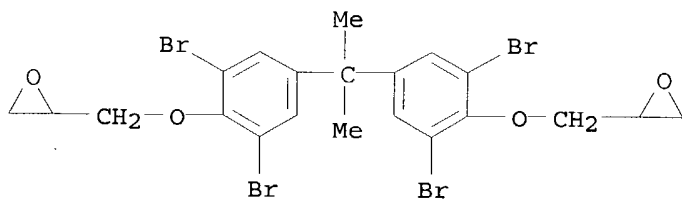
CM 2

CRN 676547-37-8  
CMF C37 H42 N2 O2



CM 3

CRN 3072-84-2  
CMF C21 H20 Br4 O4



IT 677006-43-8P 677006-44-9P  
RL: IMF (Industrial manufacture); PRP (Properties); TEM (Technical or engineered material use); PREP (Preparation); USES (Uses)  
(control crosslinked material; benzoxazine derivs. from formaldehyde, bisaniline derivs., substituted phenols for crosslinking agents for epoxy resins providing products with low water absorption)

RN 677006-43-8 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, polymer with BEB 580A75 and TNE 190A70 (9CI) (CA INDEX NAME)

CM 1

10/633,890 searched 12-3-04

CRN 677005-87-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

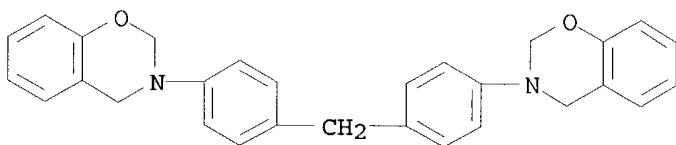
CM 2

CRN 677005-85-5  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 3

CRN 127959-98-2  
CMF C29 H26 N2 O2



RN 677006-44-9 CAPLUS  
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-,  
polymer with 2,2'-[(1-methylethylidene)bis[(2,6-dibromo-4,1-  
phenylene)oxymethylene]]bis[oxirane] and TNE 190A70 (9CI) (CA INDEX NAME)

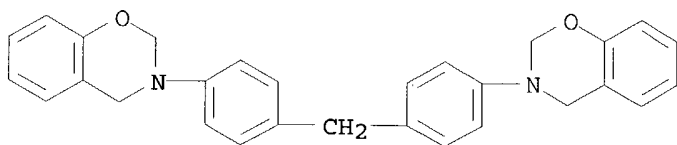
CM 1

CRN 677005-87-7  
CMF Unspecified  
CCI PMS, MAN

\*\*\* STRUCTURE DIAGRAM IS NOT AVAILABLE \*\*\*

CM 2

CRN 127959-98-2  
CMF C29 H26 N2 O2



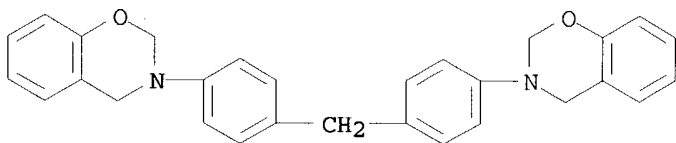
CM 3

CRN 3072-84-2  
CMF C21 H20 Br4 O4





10/633,890 searched 12-3-04



L4 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

AB Adhesives for the title films contain thermosetting oxazine polymers having  $\geq 1$  1-oxa-3-azatetralin group in the mol., alone or in combination with a curable **epoxy** resin. Thus, a 0.035-mm Cu foil was attached to 0.02-mm Kapton film by means of a 67:33 N,N-methylenedi-p-phenylenebis(benzoxazine)-3,4-**epoxycyclohexylmethyl 3,4-epoxycyclohexanecarboxylate** composition and pressed 1 h at 200°. The tear strength was 3.8 N/mm.

ACCESSION NUMBER: 1992:107765 CAPLUS

DOCUMENT NUMBER: 116:107765

TITLE: Gluing of polyimide films and circuit boards therefore

INVENTOR(S): Schreiber, Herbert; Saur, Wolfgang

PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.

SOURCE: Ger., 6 pp.

CODEN: GWXXAW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4016548	C1	19910912	DE 1990-4016548	19900523
EP 458740	A1	19911127	EP 1991-810320	19910426
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
CA 2042153	AA	19911124	CA 1991-2042153	19910509
ZA 9103626	A	19920226	ZA 1991-3626	19910514
JP 04227936	A2	19920818	JP 1991-114852	19910520
US 5176780	A	19930105	US 1991-703194	19910520
AU 9177265	A1	19920102	AU 1991-77265	19910523
PRIORITY APPLN. INFO.:			DE 1990-4016548	19900523

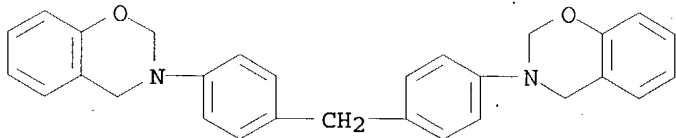
IT 127959-98-2

RL: USES (Uses)

(adhesive compns. containing, for polyimide films and metal foils, in circuit board manufacture)

RN 127959-98-2 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI)  
(CA INDEX NAME)



L4 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

AB The title resins are prepared from  $\geq 70\%$  1-oxa-3-azatetralins and  $\leq 30\%$  halogenated **epoxy** resins. Thus, a composition of 3,3'-(methylenedi-p-phenylene)bis(1-oxa-3-azatetralin) 90, brominated **epoxy** resin 10, and glass fibers 9 parts gave moldings with UL-94

10/633,890 searched 12-3-04

flammability rating V-0 (1st and 2nd burning time 4.0 and 48 s, resp.);  
vs. complete burning without the **epoxy** resin.

ACCESSION NUMBER: 1991:681359 CAPLUS  
DOCUMENT NUMBER: 115:281359  
TITLE: Flame- and/or heat-resistant thermosetting resin  
preparation  
INVENTOR(S): Schreiber, Herbert; Burkart, Guenter; Knaus, Bruno  
PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.  
SOURCE: Ger., 11 pp.  
CODEN: GWXXAW  
DOCUMENT TYPE: Patent  
LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

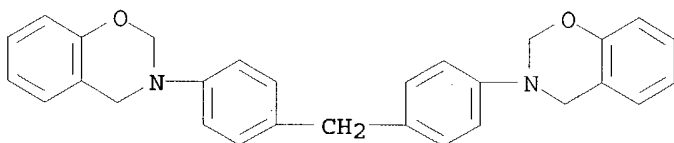
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 4016296	C1	19910905	DE 1990-4016296	19900521
EP 458739	A2	19911127	EP 1991-810319	19910426
EP 458739	A3	19930901		
R: AT, BE, CH, DE, ES, FR, GB, IT, LI, NL, SE				
ZA 9103434	A	19920226	ZA 1991-3434	19910507
CA 2042840	AA	19911122	CA 1991-2042840	19910517
CA 2042840	C	19961126		
JP 04227922	A2	19920818	JP 1991-114850	19910520
JP 3203385	B2	20010827		
AU 9177213	A1	19911121	AU 1991-77213	19910521
AU 636226	B2	19930422		
US 5443911	A	19950822	US 1993-150975	19931112
PRIORITY APPLN. INFO.:			DE 1990-4016296	A 19900521
			US 1991-703193	B2 19910520

IT 127959-98-2

RL: USES (Uses)  
(in fire- and heat-resistant halogenated **epoxy** resin  
moldings)

RN 127959-98-2 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro- (9CI)  
(CA INDEX NAME)



L4 ANSWER 5 OF 5 CAPLUS COPYRIGHT 2004 ACS on STN

AB The title resins contain thermosetting compds. containing 1-oxa-3-azatetralin  
groups and immiscible fireproofing agents. Curing a mixture of  
3,3'-(Methylenedi-p-phenylene)bis(3,4-dihydro-1,3-benzoxazine) 30, Al(OH)<sub>3</sub>  
10, and glass fabric (110 g/m<sup>2</sup>) 10 parts at 200° gave a 0.9-mm  
plate with UL-94 flammability rating V-1.

ACCESSION NUMBER: 1990:441934 CAPLUS  
DOCUMENT NUMBER: 113:41934  
TITLE: Fire- and heat-resistant plastics and their  
preparation  
INVENTOR(S): Schreiber, Herbert; Saur, Wolfgang  
PATENT ASSIGNEE(S): Gurit-Essex A.-G., Switz.  
SOURCE: Eur. Pat. Appl., 10 pp.  
CODEN: EPXXDW  
DOCUMENT TYPE: Patent

10/633,890 searched 12-3-04

LANGUAGE: German  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 356379	A1	19900228	EP 1989-810514	19890706
EP 356379	B1	19960320		
R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
CH 675248	A	19900914	CH 1988-2733	19880718
CH 678531	A	19910930	CH 1989-2383	19890627
AT 135724	E	19960415	AT 1989-810514	19890706
ES 2088905	T3	19961001	ES 1989-810514	19890706
US 5021484	A	19910604	US 1989-376875	19890707
CA 1338298	A1	19960430	CA 1989-605649	19890711
AU 8938067	A1	19900118	AU 1989-38067	19890713
AU 615557	B2	19911003		
CN 1039602	A	19900214	CN 1989-106065	19890718
CN 1019810	B	19921230		
JP 02069567	A2	19900308	JP 1989-183852	19890718
JP 2952419	B2	19990927		
DD 284036	A5	19901031	DD 1989-330942	19890718
KR 130970	B1	19980413	KR 1989-10212	19890718
ZA 8905222	A	19900425	ZA 1989-5222	19890719
PRIORITY APPLN. INFO.:				
			CH 1988-2733	A 19880718
			CH 1989-2383	A 19890627

IT 127959-99-3

RL: USES (Uses)  
(fire- and heat-resistant, compns. of)

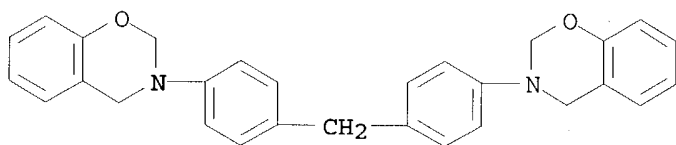
RN 127959-99-3 CAPLUS

CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, homopolymer (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

CMF C29 H26 N2 O2



IT 127960-00-3 127960-04-7 127960-05-8

RL: USES (Uses)  
(fire- and heat-resistant, formulation of)

RN 127960-00-3 CAPLUS

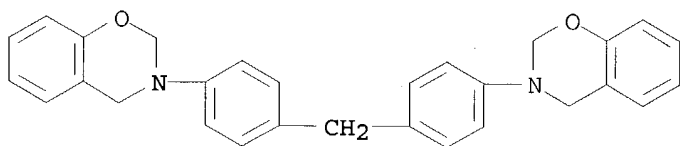
CN 2H-1,3-Benzoxazine, 3,3'-(methylenedi-4,1-phenylene)bis[3,4-dihydro-, polymer with 2,2'-[(1-methylethylidene)bis(4,1-phenyleneoxymethylene)]bis[oxirane] (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

CMF C29 H26 N2 O2

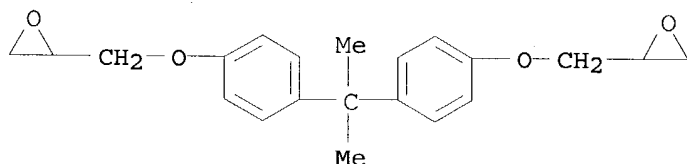
10/633,890 searched 12-3-04



CM 2

CRN 1675-54-3

CMF C21 H24 O4



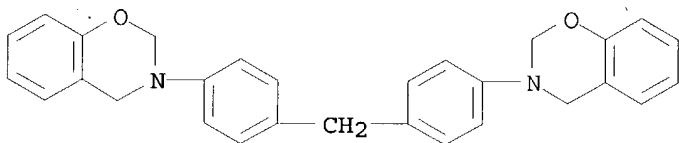
RN 127960-04-7 CAPLUS

CN 7-Oxabicyclo[4.1.0]heptane-3-carboxylic acid, 7-oxabicyclo[4.1.0]hept-3-ylmethyl ester, polymer with 3,3'-(methylenebis(4,1-phenylene))bis[3,4-dihydro-2H-1,3-benzoxazine] (9CI) (CA INDEX NAME)

CM 1

CRN 127959-98-2

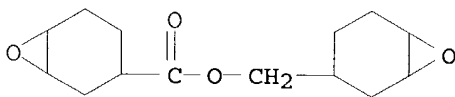
CMF C29 H26 N2 O2



CM 2

CRN 2386-87-0

CMF C14 H20 O4



RN 127960-05-8 CAPLUS

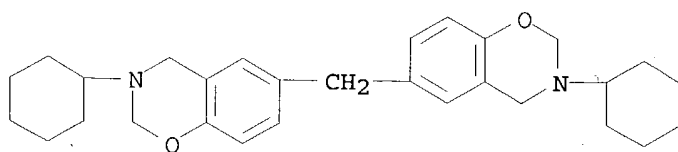
CN 2H-1,3-Benzoxazine, 6,6'-methylenebis[3-cyclohexyl-3,4-dihydro-, polymer with 3,3'-(methylenebis(4,1-phenylene))bis[3,4-dihydro-2H-1,3-benzoxazine] (9CI) (CA INDEX NAME)

CM 1

CRN 127960-01-4

CMF C29 H38 N2 O2

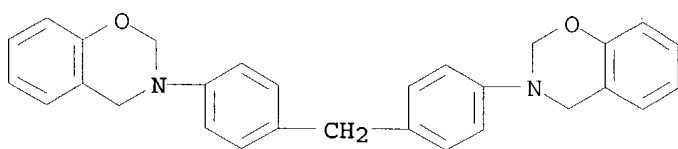
10/633,890 searched 12-3-04



CM 2

CRN 127959-98-2

CMF C29 H26 N2 O2



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COST IN U.S. DOLLARS

SINCE FILE

TOTAL

ENTRY

SESSION

FULL ESTIMATED COST

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282.01

DISCOUNT AMOUNTS (FOR QUALIFYING ACCOUNTS)

SINCE FILE

TOTAL

ENTRY

SESSION

CA SUBSCRIBER PRICE

-4.20

-4.20

STN INTERNATIONAL LOGOFF AT 11:24:29 ON 03 DEC 2004